20-3-37/46

A Case of Montmorillonite Replacement by Hydro-Mica
in Clays of Middle Carboniferous Deposits of the Saratov
Near-Volga Region

ASSOCIATION: All-Union Petroleum Institute for Scientific Research and Geological Prospecting (Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut)

PRESENTED: March 12, 1957, by N. M. Strakhov, Academician

SUBMITTED: March 11, 1957

AVAILABLE: Library of Congress

Card 3/3

FLEROVA, O.V., kand. geol.-mineral. nauk, red.; BAKIROV, A.A., red.; VEBER, V.V., red.; DANOV, A.V., red.; DIKENSHTEYN, G.Kh., red.; MAKSIMOV, S.P., red.; POZNYSH, M.A., red.; SAIDOV, M.N., red.; SEMIKHATOVA, S.V., red.; TURKEL'TAUB, N.M., red.; KHALTURIN, D.S., red.; SHABAYEVA, Ye.A., red.; ZARETSKAYA, A.I., vedushchiy red.; FEDOTOVA, I.G., tekhn. red.

[Mesozoic and Tertiary deposits of the central provinces of the Russian Platform] Mezozoiskie i tretichnye otlozheniia tsentral'nykh oblastei Russkoi platformy. Pod red. O.V. Flerovoi. Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1958. 291 p. (MIRA 11:10)

1. Moscow. Vsesoiuznyy nauchno-issledovatel'skiy geologo-razvedochnyy neftyanoy institut.
(Russian Platform--Geology, Stratigraphic)

FILIPPOVA, Mariya Filippovna, kand.geol.-miner.nauk; ARONOVA, S.M.; AFREMOVA,
M.F.; GALAKTIONOVA, N.M.; GASSANOVA, I.G.; GIMPELEVICH, E.D.; KARASEV,
M.S.; LYASHENKO, A.I.; MAYZEL', Z.L.; RATEYEV, M.A.; SOKOLOVA, L.I.;
SOLOV'YEVA, N.S.; KHANIN, A.A.; SHISHENINA, Ye.P.; SHNEYDER, N.P.;
BAKIROV, A.A., red.; VEBER, V.V., red.; DANOV, A.V., red.; DIKEN-
SHTEYN, G.Kh., red.; MAKSIMOV, S.P., red.; POZNYSH, M.A., red.;
SAIDOV, M.N., red.; SEMIKHATOVA, S.V., red.; TURKEL'TAUB, N.M., red.;
UL'YANOV, A.V., red. [deceased]; KHALTURIN, D.S., red.; SHABAYEVA,
Ye.A., red.; RAZINA, G.M., vedushchiy red.; GENNAD'YEVA, I.M., tekhn.
red.

[Devonian deposits in the central provinces of the Russian Platform]
Devonskie otlozheniia tsentral'nykh oblastei Russkoi platformy.
Pod red. M.F.Filippovoi. Leningrad, Gos. nauchno-tekhn.izd-vo neft.
i gorno-toplivnoi lit-ry, 1958. 404 p. (MIRA 11:4)
(Russian Platform--Geology, Stratigraphic)

PEDASHENKO, Aleksandr Ivanovich [deceased]; SHABAYEVA, Ye.A., kand.
geol.-mineral.nauk, red.; KUZ'MINA, N.M., vedushchiy red.;
FEDOTOVA, I.G., tekhn.red.

[Crystalline foundation of the central part of the Russian Platform] Kristallicheskii fundament srednei chasti Russkoi platformy. Pod red. E.A.Shabaevoi. Moskva, Gos.nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1959. 216 p. (MIRA 12:10)

(Russian Platform--Rocks, Crystalline and metamorphic)

SHABAYEVA, Ye.A.

Mineralogy of lower Cretaceous clay rocks in the Groznyy-Daghestan oil-bearing province. Geol.nefti i gaza 3 no.10: 35-40 O '59. (MIRA 12:12)

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SHABAYEVA, Ye.A.; GORBUNOVA, L.I.

Petrographic and mineralogical characteristics of Devonian and Carboniferous clays in Volga portion of Saratov Province. Trudy VNIGNI no.13:87-113 '59. (MIRA 13:1)
(Saratov Province--Clay)

SHABAYEVA, Ye.A.

Petrographic and mineralogical characteristics of Paleogene deposits in the Kushka region, Turkmenistan. Dokl. AN SSSR 139 no.1:180-183 Jl '61. (MIRA 14:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut. Predstavleno akademikom N.M. Strakhovym.
(Kushka region--Petrology)

SHABAYEVA, Ye.A.

Palygorskite from Paleogene deposits of southeastern Turkmenistan.
Dokl. AN SSSR 143 no.4:939-942 Ap '62. (MIRA 15:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut. Predstavleno akademikom N.M.Strakhovym.
(Turkmenistan—Palygorskite)

SHABAYEVA, Ye.A.

Lithological and mineralogical characteristics of Paleogene sediments of the Kushka region in Turkmenia. Trudy VNIGNI no.35:167-202 '61. (MIRA 16:7)

(Turkmenistan--Rocks, Sedimentary)

VEBER, V.V.; SHABAYEVA, Ye.A.

Find of volcanic ash in the Kyzylburun facies of a producing layer. Izv. AN Azerb. SSR. Ser. geol.-geog. nauk no.2:31-35 '65. (MIRA 18:8)

CHABAYEVA, Ye. L. Cand Geolog-Mineralog Sci

Dissertation: "Comperative Petrographic-Mineralogical Investigation of Mesozoic Clays in the Moscow Basin."

25 March 49

Inst of Geological Sciences, Acad Sci USSR

SO Vecheryaya Moskva
Sum 71

SHABAYEVA, Ye.V.

IL'INA, N.S., kand.geologo-mineralog.nauk; YELINA, L.M.; RYZHOVA, A.A.; BUZINOVA, V.M.; DMITRIYEVA, L.Ya.; GIMPELEVICH, E.D.; GALAKTIONOVA, N.M.; IL'INSKAYA, V.V.; SOLOV'YEVA, N.S.; KARASEV, M.S.; BAKIROV, A.A., red.; VEBER, V.V., red.; DANOV, A.V., red.; DIKENSHTEYN, G.Kh., red.; MAKSIMOV, S.P., red.; POZNYSH, M.A., red.; SAIDOV, M.N., red.; SEMIKHATOVA, S.V., red.; TURKEL'TAUB, N.M., red.; UL'YANOV, A.V., red. [deceased]; KHALTURIN, D.S., red.; SHABAYEVA, Ye.V., red.; CHIZHOV, A.A., vedushchiy red.; YASHCHURZHINSKAYA, A.B., tekhn.red.

[Coal deposits of the central provinces of the Russian Platform] Kamennougol'nye otlozheniia tsentral'nykh oblastei Russkoi platformy. Pod red. N.S.Il'inoi. Leningrad, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1958. 209 p. (MIRA 12:3)

(Russian Platform--Coal geology)

GOROSHKOVA, V.A.; IVANOVA, Z.P.; MELIKOVA, I.M.; RYZHOVA, A.A.; SUVOROV, P.G.; TUNYAK, A.P., kurator; SHABAYEVA, Ye.V.

Oparino key well. Trudy VNIGNI no.26:5-64 '60. (MIRA 14:1)
(Russian Platform--Petroleum geology)

NIKIFOROV, Yu.A.; SHABDENOV, B.A.

Decomposition of indium phosphate in caustic soda solutions. Trudy Inst. met. i obog. AN Kazakh. SSR 12:23-25 '65.

(MIRA 18:10)

YUGOSLAVIA / Chemical Technology. Chemical Products. H
Food Industry.

Abs Jour: Ref Zhur-Khimiya, 1958, No 20, 69077.

Author : Shabec S.
Inst : Not given.
Title : Production of the 3/4-Fatty and Semi-Fatty Cheeses.

Orig Pub: Mlyekarstvo, 1957, 7, No 12, 270-272.

Abstract: In the production of the 3/4 fatty and semi-fatty cheeses it is important to use milk that contains an exact quantity of fats and has a precise ratio of fats/paracasein. Determination of the percent fats in a milk used in the manufacture of differ-

SHABEL'NIK, A.V.

975. DRYING OF FLOTATION CONCENTRATE IN DRUM DRYERS. Itsikson, M.I., Shabel'nik, A.V. and Shlomov, V.N. (Koks i Khim. (Coke & Chem., Moscow), 1956, (1), 11-16). An illustrated description and tabulated results are given for a plant in which coal preparation middlings are burned on a chain grate and the combustion gases mixed with cold air are passed through a rotary drum dryer. (L).

3

SHAPIRO, S.Ya., inzhener; SHABEL'NIK, A.V., inzhener.

Mechanical removal of ash and slag. Energetik 4 no.2:12-13 F '56.
(MLRA 9:5)

(Conveying machinery) (Ash disposal)

NIKIFOROV, G.V., tekhnik-mekhanik,; BELIY, A.V.[Bielyi, A.V.], tekhnik-mekhanik,;
SHABEL'NIK, B.P.[Shabel'nyk, B.P.]

How to improve the operation of the SK-2,6 combine. Mekh. sil'. hosp. 9 no. 8:10-11 Ag '58. (MIRA 11:8)

1. Khar'kivs'ke oblasne upravlinnya sil's'kogo gospodarstva(for Shabel'nik).
(Combines(Agricultural machinery))

SHABEL'NIK, B.P. [Shabel'nyk, B.P.], inzh.

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(MIRA 11:10)

1. Khar'kovskoye oblastnoye upravleniye sel'skogo khozyaystva.
(Agricultural machinery) (Silos)

SHABEL'NIK, B.P. [Shabel'nyk, B.P.], inzh.; LYALYUK, P., red.; SHEVCHENKO, M.G.[Shevchenko, M.H.], tekhn. red.

[Mounted reaper which works without an operator] Lafetna zhatka pratsiue bez mashynista. Khar'kiv, Khar'kivs'ke oblasne vyd-vo, 1958. 7 p. (MIRA 14:12)

1. Khar'kovskoye oblastnoe upravleniye sel'skogo khozyaystva (for Shabel'nik).

(Grain—Harvesting)

KRAPIVKO, I.I. [Krapyvko, I.I.], inzh.; SHABEL'NIK, B.P. [Shabel'nyk, B.P.], inzh.

Hydraulic manure loader. Mekh.sil'.hosp. 10 no.1:23-24 Ja '59. (MIRA 12:4)

(Farm manure)
(Agricultural machinery--Hydraulic equipment)

SHABEL'NIK, D.Ya.; SALIY, V.Ye.

Case of asphyxia through obstruction of the respiratory tract by friable bodies. Sud.-med. ekspert. 8 no.1:46-47 Ja-Mr '65.
(MIRA 18:5)

1. Kafedra sudebnoy meditsiny (zav. - dotsent B.I.Sokolov) Ivano-Frankovskogo meditsinskogo instituta i Byuro sudebnomeditsinskoy ekspertizy (nachal'nik G.M.Pal'mova) Ivano-Frankovskogo oblastnogo otdela zdravookhraneniya.

SALO, D.P.; MIKHAYLENKO, G.I. [Mykhailenko, H.I.]; KRIVENCHUK, P.Ye. [Kryvenchuk, P.IE.]; TOPORINA, O.M. [Toporyna, O.M.]; Prinimali uchastiye: SHABEL'NIK, V., student; OLENICH, Ye. [Olenych, E.], student; SUDGAL'TER, D. [Sudhal'ter, D.], student

Alkyloamides and the possibility of using them in pharmacy. Report No.2: Study of the emulsifying properties of the monoalkyloamides of fatty acids for the purpose of using them in pharmacy. Farmatsev. zhur. 16 no.6:19-22 '61. (MIRA 15:5)

1. Kafedra tekhnologii sekarstvennykh form i galenovykh preparatov Khar'kovskogo farmatsevticheskogo instituta, zav. kafedroy dotsent G.P.Pivnenko [Pivnenko, H.P.].

(AMIDES)

SHABEL'NIKOV, A.P.; MUKHLENOV, I.P.

Absorption of medium-soluble gases in a foaming state. Izv.vys. ucheb.zav.; khim. i khim. tekh. 6 no.6:982-990 '63. (MIRA 17:4)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta, kafedra obshchey khimicheskoy tekhnologii.

MUKHLENOV, I.P.; SHABEL'NIKOV, A.P.; Prinimali uchastiye: KOSHURNIKOV, B.L.;
GOVOROV, V.P.; BONDARCHUK, T.P.

Study of the processes of water-cycling concentration and purification of sulfur dioxide. Zhur.prikl.khim. 37 no.1:3-8 Ja '64.
(MIRA 17:2)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

SHABEL'NIKOV, A.P.; MUKHLENOV, I.P.

Processes of water-cycling enrichment and purification of sulfur dioxide. Zhur. prikl. khim. 37 no.2:246-250 F '64.
(MIRA 17:9)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

1-6

Category : USSR/Radiophysics - Radio-wave propagation. Ionosphere

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1909

Author : Shabel'nikov, A.V.
Title : Effect of the Form of the Altitude Distribution Function of the Dielectric Constant of Air on the Refraction of Radio Waves in the Lower Layers of the Atmosphere

Orig Pub : Radiotekhn. i elektronika, 1956, 1, No 3, 277-280

Abstract : The methods of the variational calculus are used to derive the theoretical dependence of the refraction angle α on the altitude-distribution function of the dielectric constant of air, and it is shown that the angle of refraction is practically independent of the form of the function E(h) over a wide range of zenith angles from 0 to 80 degrees.

Card : 1/1

V

SHABELNIKOV, A. ~~W~~.

"Limits of the Applicability of the Perturbation Method During the Solution of Problems of Incoherent Scatter."

report presented at the Sov-bloc VHF Propagation Conference, sponsored by the Institute for Radio Engineering and Electronics of the CSR Acad. Sci, Liblice, Czech. 10-12 Nov 1958.

SHABELNIKOV, A. V.

Ю. В. Белоцветов

Анализ схем многократного преобразования частоты

II. СЕКЦИЯ РАСПРОСТРАНЕНИЯ РАДИОВОЛН

Руководитель Я. А. [illegible]

9 июня

(с 10 до 12 часов)

Совместное заседание с секцией общей радиотехники

А. В. Просин,
В. Ф. Губский

Некоторые вопросы теории разнесенного приема при рассеянном распространении УКВ

А. В. Просин,
Г. И. Слободенюк,
Ю. П. Ляшенко

Экспериментальное исследование разнесенного приема при дальнем тропосферном распространении УКВ

52

(с 12 до 16 часов)

Б. А. Введенский,
Н. А. Арманд

О механизме потерь усиления узконаправленных антенн при дальнем тропосферном распространении ультракоротких радиоволн

А. В. Шабельников

К вопросу о применении метода возмущений при изучении задач некогерентного рассеяния и его связи со строгим дифракционным решением

Э. А. Канер,
Ф. Г. Басс

К теории распространения радиоволн в среде со случайными неоднородностями над идеально проводящей плоскостью.

9 июня

(с 18 до 22 часов)

А. В. Мень,
С. Я. Брауде,
В. И. Горбач

Флюктуации фазовых фронтов при распространении десятисантиметровых радиоволн над поверхностью моря.

53

Report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORiE), Moscow, 8-12 June. 1959

SHABELNIKOV, A. V., SHIRAY, R. A., SOKOLOV, A. V., VVEDENSKIY, B. A., ARMAND, N. A., KALININ, A. I. and KOLOSOV, M. A.

"Long Range XXXXXXX Tropospheric Propagation of Ultra Short Radio Waves."

report presented at Commission II, 13th General Assembly of the International Scientific Radio Union in London, 5-15 Sept 1960.

Report available, Encl. to B-3,176,875, 30 Jan 61

20573
S/109/61/006/002/005/023
E032/E314

9,9300 (6150 1103)

AUTHOR: Shabel'nikov, A.V.

TITLE: The Perturbation Method and its Relation to the Exact Diffraction Method in the Solution of the Incoherent Scattering Problem

PERIODICAL: Radiotekhnika i elektronika, 1961, Vol. 6, No. 2, pp. 204 - 213

TEXT: Staras (Ref. 1), Wheelon (Ref. 2), Eckart (Ref. 3) and Paul (Ref. 4) have used the perturbation method in connection with the incoherent scattering of radio waves by irregularities in the troposphere. The perturbation method is distinguished by its simplicity and can be used to compute the scattered field for irregularities of arbitrary form. However, the method is only approximate and is not of universal validity. The present author attempts to relate the perturbation method to the rigorous diffraction method and to establish the limits of applicability of the perturbation approach. In carrying out this programme he considers the diffraction of a plane electromagnetic wave by a sphere and expands the exact solution into a series in powers of the

20573

S/109/61/006/002/005/023
E032/E314

The Perturbation Method ....

small parameter $\alpha = \Delta n k_o a$. In the latter expression $k_o = 2\pi/\lambda$, a is the radius of the dielectric sphere and Δn is the difference between the refractive indices of the medium and the sphere. It is shown that the solution obtained by the perturbation method is equivalent to the first term in this expansion. The second part of the paper is concerned with the application of the perturbation method to the scattering of a plane electromagnetcwave by a dielectric sphere with a constant and a variable ε . It is shown that the perturbation method in this case is more convenient and the results are easier to interpret than in the case of the exact diffraction method. The results obtained by the two methods are found to be identical, provided the condition

$$\frac{\Delta n k_o a}{2} \ll 1 \qquad (24)$$

is satisfied.

Card 2/4

These remarks apply to the case of a constant ε. If the dielectric constant is a function of the radius of the sphere, and in particular

$$\varepsilon(r) = \Delta\varepsilon e^{-r/\ell} \tag{50}$$

where

$$\ell \ll a \tag{51}$$

then the scattering by a dielectric sphere of radius a with variable ε (c.f. Eq. 50) can be looked upon as the scattering by a sphere of radius ℓ and constant ε. In the final section it is shown that the scattering of radio waves by statistical irregularities may be looked upon as scattering by spheres whose dielectric constant at the centre of a sphere is equal to $\sqrt{\Delta\varepsilon^2}$ and falls off along the radius in accordance with the expression

20573

The Perturbation Method S/109/61/006/002/005/023
E032/E314

$$\varepsilon(r) = R(r)\sqrt{\frac{bk_2V}{16\pi\int\limits_0^r R(r)\sin(bk_2r)\,rdr}}. \qquad (50)$$

where R(r) is the correlation function and
V is the volume.

special case when ε is given by Eq. (50), the scattering of radio waves by statistical irregularities the troposphere may be reduced to the scattering by a sphere of radius ℓ and a constant ε (c.f. also Booker Gordon - Ref. 11). Acknowledgments are expressed to B.A. Vvedenskiy, A.G. Sokolov and N.A. Armand for discussions interest. There are 1 figure and 11 references: 2 Soviet non-Soviet.

SUBMITTED: December [illegible], 1959

Card 4/4

3

24460
S/109/61/006/006/001/016
D204/D303

9,9300 (1344)

AUTHORS: Armand, N.A., Vvedenskiy, B.A., Kalinin, A.I., Kolosov, M.A., Sokolov, A.V., Shabel'nikov, A.V., and Shirey, R.A.

TITLE: A survey of work on the tropospheric propagation of ultrashort radiowaves

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 6, 1961, 867 - 885

TEXT: The large body of experimental work done in this field has been aided by the perfecting of apparatus and auxiliary instruments and given impetus by the need for more knowledge to assist the development of telephony, television and radio communications. The authors examine the following: 1) Relations between field strength and distance; 2) Signal level and frequency: the theoretical picture is confused, state the authors, but most experimental work suggests that P_r/P_o (P_r - received power, P_o - value in

Card 1/8

24460

S/109/61/006/006/001/016
D204/D303

free space) declines as the frequency rises. No uniform value of $P_r(\lambda)$ has been found as yet, probably because of the changeability of the tropospheric structure and meteorological conditions; 3) Signal and time: Signal fading may be rapid or slow. Most information concerns 300 - 500 km traces. Slow fading is caused by the appearance or disappearance of inversion layers, large irregularities and changes in the value of $d\varepsilon/dh$. Usually the signal strength is greater in the evening and at night, clearer in summer than in winter and at shorter (100-150 km) rather than longer (400 - 500 km) distances. The amplitude is related to frequency; also, as it combines with slow fading, the average amount of fading increases reaching, according to some sources, a maximum at 100-130 km. Others maintain that it declines with increase in distance to an equal summer and winter value of 3 - 10 db at 900 km; 4) Loss of antennae amplification: The phenomenon occurs beyond the horizon and means that for an antenna with an amplification coefficient G, exceeding 35-40 db, amplification is less than in free space. To account for this there are two hypotheses: (1) Spreading of radiowaves in a statistically non-homogeneous medium leads to distortion of the wave front in the plane of the receiving antenna and thus the energy absorbed is less than in the absence of amplitude and phase fluctuation, (2) elementary waves with various random angles of approach may reach the receiving antenna. These hypotheses have been investigated but comparison of results is hampered by differences in experimental conditions. For a 300 km trace the amplification loss increases with increase in the average amplification of receiving and transmitting antennae and with an increase of D to 300 - 500 km and f = 2290 megacycles. At greater distances the loss falls; 5) Signal distortion: Work in this field either treats the troposphere as an ideal quadruple network or aims to determine the amplitude correlation of the signal components on different frequencies in the transmitted spectrum. If with antennae with low directivity the amplitude of delayed waves is diminished by diffraction weakening of the earth's surface and the "directivity" of the troposphere, then at antennae with narrow patterns the amplitude of these waves decreases because of the di-

24460

A survey of work on the ... S/109/61/006/006/001/016
D204/D303

rectivity of the antenna. The maximum transmitted frequency band depends on the width of the directivity pattern of the antenna. The random nature of the tropospheric radiation means that signal distortion has a random pattern as experiments in the USSR have confirmed. Two separated antennae in space diminish distortion and guarantee a large carrying capacity of tropospheric radio links; 6) Radio-meteorological research: Refractometric measurements have dealt with the structure of the troposphere and, in particular, the value of $\varepsilon(h)$. $(\Delta\varepsilon)^2$ and the area of turbulence

$$1\sqrt{(\Delta\varepsilon)^2}$$

usually varies within the range 0.3 - 3N units and irregular layers are usually 1 - 300 m thick. "Jump" intensity in these regions is usually 2 - 50 or 60 N units, large especially in the "invisible clouds". It was stated that at a height h = 3000 m and more $(\Delta\varepsilon)^2/1$ is too small to explain distant fields and its alteration with height does not give the necessary value of $P_r(D)$. The authors

Card 4/8

24460
S/109/61/006/006/001/016
D204/D303

A survey of work on the ...

then deal with incoherent scatter and globular irregularities: In the last few years much attention has been devoted to the conception of incoherent scatter. Two chief theories have been established: One which gives for the frequency subordinate of P_r/P_0, a coefficient of $\lambda^{-7/3}$, and the theory of "disturbance of the gradient", which gives λ. The second approaches more closely to the experimental facts, and is generally preferred. Maxwell's equations for statistically non-homogeneous layers above a spherical earth have not yet been resolved and a solution must combine the theory of diffraction spread with pereoptical theory. All theories, in essence, approach those of a "radar form type"

$$\frac{P_r}{P_0} = QD^2 \int_V \frac{\sigma(\theta)}{R_1^2 \; R_2^2} \, dV, \qquad (1)$$

where Q is a constant factor; $\sigma(\theta)$ - "scatter area" - a junction for the influence of fluctuation ϵ and its relation to λ and the

Card 5/5

24160
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D204/D303

A survey of work on the ...

gradient dε/dh; with this formula theory discrepancy concerns basically the value of σ. σ, moreover, can be expressed simply as

$$\sigma(\theta) = \frac{b}{\sin^{m}\left(\frac{\theta}{2}\right)},$$

where θ - radiation angle, equal to the angular distance between transmitter and receiver; b - expression giving ratios of 1, dε/dh and others to $(\Delta\varepsilon)^2$. For whole even numbers $m > 2$ this accords well with a general formula and is integrated with formula 2 to give

$$\frac{P_r}{P_o} = Q\, b\, A_m\, D^{-m+3}, \qquad (2)$$

where A_m depends on m. If $b \simeq h^{-n}$, then $D^{-m+3-2n}$ replaces D^{-m+3}; m can be substituted by nearest even whole number, in cases of close approximation. Current theories give results approximate to

Card 6/8

24460

S/109/61/006/006/001/016
D204/D303

A survey of work on the ...

Eq. 2. Finally mentioned are: a) incoherent scatter and turbulency layers, and b) coherent reflecting layers. On a) it is pointed out that the use of tropospheric layers for wave reflection has been extensively studied and that in 1955 V.N. Troitskiy (Ref. 107: Radiotekhnika, 1956, 11, 5, 3) obtained a calculated formula which accorded with experimental observations. On b) it is noted that stable layer reflection has met with two objections: The first concerns the incompatability of the existence of great changeability patterns over long distances with the idea of stable tropospheric layers; the second, is, however, theoretical and hardly affects the practical aspect of the problem; the existence of layers has been firmly established and it is positive that a diffraction approach to the problem of spread along the earth's curvature will be of value. A simplification of reported formulae was attempted and

$$\frac{P_r}{P_o} = \frac{1}{D} \Phi \left(\lambda, \left[\frac{d}{dh}\right]_o, h_1, h_2\right) \exp \left[- \alpha D\right],$$

Card 7/8

24160
S/109/61/006/006/001/016
A survey of work on the ... D204/D303

was obtained, where Φ is a complicated function, analogous to the high factors of classical diffraction theory, containing frequency responses and 'jump' ratios $[d\varepsilon/dh]_0$, α - another function of type A - B ln λ related to parameters, whose size A and B does not depend on λ. Though not strictly accurately descriptive of the fluctuation character of the field the equation gives the necessary experimental ratio $P_r(D)$. There are 9 figures and 113 references: 24 Soviet-bloc and 97 non-Soviet-bloc. The four most recent references to the English-language publications read as follows: Radio transmission by ionospheric and tropospheric scatter, Proc. I.R.E., 1960, 48, 1, 30; E.D. Denman, Proc. I.R.E., 1960, 48, 1, 112; I.H. Vogelman, I.L. Ryerson, M.H. Bickelhaupt, Proc. I.R.E., 1959, 47, 5, 688; L.A. Ames, E.T. Martin, E.J. Rogers, Proc. I.R.E., 1959, 47, 5, 769.

SUBMITTED: July 27, 1960

Card 8/8

~~AM5027749~~ ~~Monograph~~ ~~UR/~~

Armand, N. A.; Vvedenskiy, B. A.; Gusyatinskiy, I. A.; Igoshev, I.P.; Kazakov, L. YA.; Kalinin, A. I.; Nazarova, L. G.; Nemirovskiy, A. S.; Prosin, A.V.; Ryskin, E. YA.; Sokolov, A. V.; Tarasov, V.A.; Tashkov, P. S.; Tikhomirov, YU. A.; Troitskiy, V. N. Fedorova, L. V.; Chernyy, F. B.; Shabel'nikov, A. V.; Shirey, R. A.; Shifrin, YA. S.; Shur, A. A.;;YAkovlev, O. I.; Kolosov, M. A.; Levshin, I. P.; Lomakin, A. M.

Upper tropospheric propagation of ultrashort radio waves (Dal'neye troposfernoye rasprostraneniye ul'trakorotkikh radiovoln) Moscow, Izd-vo "Sovetskoye radio", 1965. 414 p. illus., biblio. 4000 copies printed.

TOPIC TAGS: radio wave propagation, tropospheric radio wave, radio communication, space communication, tropospheric scatter communication, signal processing, signal distortion, field theory

PURPOSE AND COVERAGE: This monograph is intended for specialists working in the field of radiowave propagation, designers of long-distance radio communication systems, and teachers and students of the advanced courses in schools of higher technical education. The monograph contains, for the most part, heretofore unpublished results of Soviet experimental and theoretical investigations in the field of long-distance tropospheric ultrashortwave propagation.

Card 1/10 UDC: 621.371.24

ACC NR: AM5027749

Problems of investigating the troposphere by means of refractometers, the mean level of signals, meteorological conditions and topography, fluctuation of arrival angles and distortions of antenna directivity patterns, losses in antenna gain, and quick and slow fadings of signal levels are discussed. The statistical characteristics of the signals at diversity reception in time, space, frequency and angle as well as the distortion of signals in the communication systems are also investigated. The long-distance propagation theory is analyzed, and the engineering method of calculating field intensity at long-distance tropospheric propagation is given. At present, there is no theory of Long-Distance Tropospheric Propagation which can be applied effectively enough in practice. Thus, in the investigation of that propagation, considerable attention has to be paid to experiments. The special characteristics of geographical conditions of the territory involved should be taken into consideration during the analysis of experimental data and in their practical application because the conditions of propagation in arctic and tropical climates differ from those existing over seas and continents. A considerable part of the monograph deals with the investigation of long-distance tropospheric propagation carried out over dry land routes, 800 km long, in the central part of the USSR under the general supervision of B. A. Vvedenskiy and A. G. Arenberg (up to 1957). V. I. Siforov investigated problems con-

Card 2/10

ACC NR: AM5027749

nected with distortions and fluctuations of signals. References follow each chapter.

TABLE OF CONTENTS:

Foreword --

Ch. I. Radio Engineering Methods of Investigating the Troposphere Dielectric Constant -- 5

Bibliography -- 16

Ch. II. Results of Troposphere Dielectric Constant Measurements -- 17
1. Relationship between the mean value of the air refraction index and altitude. Standard radio-atmosphere -- 17
2. Fluctuations of the air refraction index -- 24
3. Some notions on the troposphere model -- 43

Bibliography -- 45

Ch. III. Average (mean) Signal Levels in Long Distance Tropospheric Propagation of Ultrashort Waves (L T P U S W) -- 48

Card 3/10

ACC NR: AM5027749

1. Equipment and measuring methods for the mean signal level -- 48
2. Signal attenuation function in LTP USW -- 54
3. Relationship between mean signal level and the distance -- 57
4. Relationship between mean signal level and the wavelength -- 63
5. Relationship of mean signal level and the shadow angles of both transmitting and receiving antennas -- 65
6. Diurnal and seasonal variations of mean signal level -- 72

Bibliography -- 75

Ch. IV. Effect of Air Refraction Index at the Earth Surface on the Mean Field Level in LTP USW -- 77
1. Correlation of the mean field level with the air refraction index at the Earth Surface. -- 77
2. Possibility of predicting field intensity variations -- 81

Bibliography -- 86

Ch. V. Fluctuation of Radiowave Arrival Angles and Instantaneous Patterns of Antennas Directivities -- 88
1. Methods of measuring radiowave arrival angles and recording of instantaneous antenna directional patterns -- 89

Card 4/10

ACC NR: AM5027749

2. Fluctuation of radiowave arrival angles in horizontal and vertical planes -- 92
3. Instantaneous antenna directional patterns -- 92

Bibliography -- 102

Ch. VI. Losses in Antenna Gain of DTP USW -- 103
1. Determination and methods of measuring losses in antenna gain - 103
2. Experimental data on losses in antenna gain -- 108
3. Theoretical investigations on losses in antenna gain -- 114

Bibliography -- 120

Ch. VII. Theories of Long Distance Tropospheric Propagation of USW -- 122
1. Introductory remarks -- 122

Bibliography -- 129

2. Theory of scattering radiowaves by tropospheric turbulent nonhomogeneities -- 130

Card 5/10

ACC NR: AM5027749

Bibliography -- 150

3. Reflection of radiowaves from dielectric nonhomogeneities of definite dimensions -- 151

Bibliography -- 171

4. Reflections of radiowaves from laminated tropospheric nonhomogeneities of random character -- 172

Bibliography -- 179

Ch. VIII. Engineering Method of Design-Calculation of Field Intensity Attenuation -- 180
1. Basic rules of calculation method -- 181
2. Diffraction horizon (a distance, beginning of which, the value of the field intensity, calculated according to the diffraction formulas is smaller than the measured intensity) -- 182
3. Determination of field standard attenuation -- 182
4. Meteorological conditions correction -- 184
5. Local topography correction -- 185
6. Estimate of losses in antenna gain -- 185

Card 6/10

ACC NR: AM5027749

7. Estimate of fadings -- 186

Bibliography -- 188

Ch. IX. Statistical Characteristics of the Envelope, Phase and Frequency of the Random Signal in ITP USW -- 189

1. Statistical characteristics of atmosphere dielectric constant signal components in ITP -- 189
2. Distribution laws for the envelopes and phase of various signal components -- 193
3. Distribution laws of sum-signal envelope --
4. Multi-dimensional distribution functions of instantaneous value of envelopes and phases of the spaced signals in minute intervals 207
5. Parameters of multi-dimensional amplitude and phase distribution functions of spaced signals -- 210
6. Statistical characteristics of instantaneous values of the envelopes of spaced signals in minute intervals -- 222
7. Statistical characteristics of instantaneous values of spaced signal phases in minute intervals -- 239
8. Statistical characteristics of instantaneous value of phase first derivatives of spaced signals in minute intervals -- 248

Card 7/10

ACC NR: AM5027749

9. Statistical characteristics of instantaneous values of the first derivative of phase in minute intervals -- 257

Bibliography -- 260

Ch. X. Experimental Investigations of Rapid and Slow Fadings in ITP USW -- 262
1. Methods of measuring and processing experimental data -- 262
2. One-dimensional distribution functions of signal instantaneous values -- 264
3. One-dimensional distribution functions of signal averaged values-278
4. Period and frequency in rapid fluctuations of signal envelope-283

Bibliography -- 287

Ch. XI. Experimental Investigation of Signal Statistical Characteristics at Space, Frequency, Time and Angle Diversity Reception - 288
1. Space-diversity reception -- 288
2. Frequency-diversity reception -- 295
3. Time-diversity reception -- 299
4. Frequency-time diversity reception -- 305
5. Angle-diversity reception -- 307

Card 8/10

ACC NR: AM5027749

Bibliography -- 312

Ch. XII. Investigation of Amplitude-Frequency and Phase-Frequency Signal Characteristics at LTP -- 314
1. Measuring and processing methods of experimental data -- 314
2. Amplitude-frequency characteristics -- 321
3. Phase-frequency characteristics of LTP channel -- 325
4. Frequency characteristics of signal group time delay -- 334

Bibliography -- 350

Ch. XIII. Signal Distortion in LTP USW -- 351
1. Theoretical investigation of distortions appearing in multichannel FM LTP communication systems -- 352
2. Experimental investigation of distortion in LTP -- 384
3. Distortions appearing during TV transmission over tropospheric radio links -- 389

Bibliography -- 392

Appendix Automation of Signal Statistical Processing -- 394
1. Quantification of continuous signals and coding -- 395
2. Signal quantification instruments -- 397

Card 9/10

L 7796-66 EWT(d)/EWT(l)/EEC(k)-2 GW/WS-2
ACC NR: AP5027614 SOURCE CODE: UR/0109/65/010/011/1923/1940

AUTHOR: Ryazantsev, A. M.; Shabel'nikov, A. V.
44,55 44,55

45
B

ORG: none

TITLE: Radio wave propagation in the Earth crust (A review)
12,44,55

SOURCE: Radiotekhnika i elektronika, v. 10, no. 11, 1965, 1923-1940

TOPIC TAGS: radio wave propagation, earth crust

ABSTRACT: Based on 1929-64 Soviet and 1936-64 Western sources, this review presents some theoretical and experimental results and data on the physical and electrical properties of the Earth crust and their connections with temperature, pressure, and moisture. Methods of calculation of the field in an absorbing medium are considered, the electrical properties of the medium being either constant in time and space or varying in space in one direction. These points are covered in the review: (1) Composition and structure of the Earth crust and its

Card 1/2 UDC: 621.371.134

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ACC NR: AP5027614

electrical properties (composition and structure; distribution of pressure and temperature inside the Earth and their influence on the conductivity and dielectric constant of rocks; effect of water on the electric parameters of the Earth crust; electrical properties of rocks); (2) Methods of calculation of field strength in an absorbing medium (field of a point dipole in a homogeneous absorbent; same, absorbent with interfaces); (3) Systems of subterranian radio communication. Orig. art. has: 8 figures, 19 formulas, and 3 tables.

SUB CODE: 08, 17 / SUBM DATE: 14Oct64 / ORIG REF: 059 / OTH REF: 117

nw

Card 2/2

1. SHABEL'NIKOV, G. P. Eng.

2. USSR (600)

4. Mining Engineering

7. Experience with the method of sub-level stoping with an artificial haulage level. Gor zhur. no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January, 1953. Unclassified.

SHABEL'NIKOV, G. P.

SHABEL'NIKOV, G. P.: "Developing a rational system of working thin, slanting ore veins". Moscow, 1955. Min Higher Education USSR. Moscow Inst of Nonferrous Metals and Gold imeni M. I. Kalinin. (Dissertations for the Degree of Candidate of Technical Sciences)

SO: Knizhnaya letopis', No. 52, 24 December, 1955. Moscow.

DUBYNIN, [illegible], kandidat tekhnicheskikh nauk; SHABEL'NIKOV, [illegible]; MAKSIMOV, P.I., [illegible] inzhener; DEKHTYAREV, S.I., gornyy inzhener.

Investigating the geometry of stoping. Gor.zhur. no.9:19-22 S '65. (MIRA 18:9)

1. Gorno-geologicheskiy institut Zapadno-Sibirskogo filiala Akademii nauk SSSR (for Dubynin and Shabel'nikov). 2. Gornoye upravleniye Kuznetskogo metallurgicheskogo kombinata (for Maksimov and Dekhtyarev).

(Mining engineering)

DUBYNIN, N.G.; SHABEL'NIKOV, G.P.

Effect of organization efficiency of second mining operations on the output of ore. Trudy Inst.gor.dela.Sib.otd.AN SSSR no.1: 88-121 '58. (MIRA 12:11)
(Mining engineering--Labor productivity)

DUBYNIN, N.G.; SHABEL'NIKOV, G.P.

Agglutination of Gornaya Shoriya ores. Trudy Inst.gor.dela.Sib.
otd.AN SSSR no.1:138-144 '58. (MIRA 12:11)
(Gornaya Shoriya--Mining engineering)

SHABEL'NIKOV, G.P.; PAVLOV, A.I.

Use of metal supports in screen areas. Trudy Inst.gor.dela.
Sib.otd.AN SSSR no.1:155-159 '58. (MIRA 12:11)
(Mine timbering)

SOV/127-58-12-2/26

AUTHORS: Rachkovskiy, S.Ya., Doctor of Economic Sciences, Professor; Ginzburg, Ye. G. and Shabel'nikov, G.P., Candidates of Technical Sciences

TITLE: The Fundamentals of the Evaluation of Mineral Deposits and Mines (Osnovy otsenki mestorozhdeniy poleznykh iskopayemykh i rudnikov)

PERIODICAL: Gornyy zhurnal, 1958, Nr 12, pp 3 - 10 (USSR)

ABSTRACT: This is a continuation of the discussion of the article under the same title published by K.L. Pozharitskiy in Nr 9 (1957) of this periodical. The three authors express their opinion on this subject. There are 10 references.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota (The Moscow Institute of Non-ferrous Metals and Gold). Permskiy Gornyy institut (The Perm' Mining Institute). VNIItsvetmet (The VNIItsvetmet)

Card 1/1

SHATEL'NIKOV, G.P., kand.tekhn.nauk; LISOVSKIY, G.D., gorn.inzh.; RUDENKO, A.M., gorn.inzh.; LEDYAYKIN, S.D., gorn.inzh.

Single-state inclined top slicing and caving system. Gor.zhur. no.6: 23-26 Je '60. (MIRA 14:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsvetnykh metallov, Ust'-Kamenogorsk (for Shatel'nikov, Lisovskiy). 2. Salairskoye rudoupravleniye (for Rudenko, Ledyaykin).

(Mining engineering)

SHABEL'NIKOV, G. P., kand. tekhn. nauk; MIKHAYLOV, V. V.; SHKARPETIN, V. V.

Fire-prevention measures in mining Tekeli deposits. Bezop. truda v prom. 5 no.11:6-10 N '61. (MIRA 14:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsvetnykh metallov.

(Tekeli region—Mining engineering)

SHABEL'NIKOV, G.P.; LISOVSKIY, G.D.; STANKEVICH, I.M.; RUDENKO, A.M.; LEDYAYKIN, S.D.; ZEMLYANOV, V.P.

Testing a system of sublevel caving with breaking and drawing of the ore in inclined layers. Gor. zhur. no.6:23-24 Je '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsvetnykh metallov, Ust'-Kamenogorsk (for Shabel'nikov, Lisovskiy, Stankevich). 2. Salairskiy rudnik (for Rudenko, Ledyaykin, Zemlyanov).

(Salair region—Mining engineering)

SHABEL'NIKOV, P.

On circular delivery route. Obshchestv. pit. no.11:46-47
N '58. (MIRA 11:12)

1.Direktor Lensnabnarpita.
(Leningrad--Food--Transportation)

SHABEL'NIKOV, V.

Methodology of analyzing the time consumed in extracting nonferrous metal ores. Sots. trud 6 no. 2:83-90 F '61. (MIRA 14:2)

(Nonferrous metal industries--Labor productivity)

SOV/109-3-8-17/18

AUTHORS: Alekseyeva, A. P., Basalayeva, N. Ya., Yelinson, M.I., Zernov, D.V., Kul'varskaya, B.S., Lifshits, T.M., Savitskaya, Ya.S., Sena, L.A., Shabel'nikova, A.E. and Yurasova, V.Ye.

TITLE: The Eighth All-Union Conference on Cathode Electronics (8-ye vsesoyuznoye soveshchaniye po katodnoy elektronike)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 8, pp 1092 - 1103 (USSR)

ABSTRACT: The conference took place during October 17 - 24 1957 in Leningrad at the Fiziko-tekhnicheskiy institut AN SSSR (Physics-engineering Institute of the Ac.Sc.USSR). It was organised by the Soviet Ac.Sc. and was attended by Soviet scientists from Moscow, Leningrad, Kiyev and other towns of the Soviet Union as well as by delegates from Hungary, Czechoslovakia and Romania. Altogether, over one hundred lectures were delivered at the conference. These were divided into the following sections: Thermionic emission and the technology of thermionic cathodes; secondary electron emission; photo-electron emission; field electron emission; cathode conductivity phenomena; ionic processes and gas discharges. Some of the papers

Card1/2

SOV/109-3-8-17/18

The Eighth All-Union Conference on Cathode Electronics

read at the conference are published in the present issue of the journal; in fact, all the papers in this issue were read at the conference. Some of the papers were published in an earlier issue of the journal (Vol 2, Nr 12, 1957). A number of papers from the conference are being published in "Izvestiya AN SSSR, Ser. Fiz". Nrs 4 and 5 and also in various other journals. The present report gives brief summaries of a large number of the papers presented at the converence.

SUBMITTED: February 4, 1958

Card 2/2 1. Cathodes (Electron Tube) 2. Thermionic Emission 3. Secondary emission 4. Photoemission 5. Field emission

SOV/109-3-10-10/12

AUTHORS: Yasnopol'skiy, N.L. and Shabel'nikova, A.E.

TITLE: On the Problem of the Exit Depth of Secondary Electrons in Dielectrics (K voprosu o glubine vykhoda vtorichnykh elektronov iz dielektrikov)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 10, p 1314 (USSR)

ABSTRACT: The work deals with the problem of the exit depth of the secondary emission in an Al_2O_3 dielectric, deposited on an aluminium base, as a function of the energy of the primary electrons, V_p. It was found that the depth l is of the order of microns; for V_p corresponding to the maximum secondary emission (i.e. 300 - 450 V), the depth is about 0.2 μ. Furthermore, l increases with V_p not only to the point of the maximum secondary emission, but tends to increase for V_p much larger than this value. The depth l for a given V_p was determined from the curves of the secondary emission, σ, as a function of the thickness of the oxide layer; the coefficient of the secondary emission was measured by employing periodic

Card1/2

SOV/109-3-10-10/12

On the Problem of the Exit Depth of Secondary Electrons in Dielectrics

pulses, so that σ was independent of the irradiation time. n.b. The work was read at the eighth All-Union conference on cathode electronics - Leningrad, October 17 - 24, 1957. There are 3 Soviet references.

SUBMITTED: March 11, 1958

Card 2/2 1. Dielectrics--Theory

SOV/109-4-4-24/24

AUTHORS: Vasil'yev, G.F., Politova, N.M., Shabel'nikova, A.E., Pervova, L.Ya. and Yasnopol'skaya, A.A.

TITLE: Interdepartmental Seminaron Cathode Electronics (The 11th Meeting) (Mezhduvedomstvennyy seminar po katodnoy elektronike) (11-e zasedaniye)

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 4, pp 731 - 732 (USSR)

ABSTRACT: A meeting of the seminar took place on December 1, 1958 at the Institut radiotekhniki i elektroniki AN SSSR (Institute of Radio-engineering and Electronics of the Ac.Sc.USSR). During the meeting 8 papers were read. Yu.G. Ptushinskiy read a paper entitled: "Kinetics of the Adsorption of Oxygen on the Surface of Tungsten". The second paper, by I.M. Dykman and S.M. Pekar, dealt with "The Admixture Photo-effect of Semiconductors in the Region of the Exciton Light Absorption". The paper by T.L. Matskevich was devoted to "The Problem of the Secondary Electron Emission of Fine Films of a Number of Organic Substances". The problem of "Surface Ionisation in a Strong Electric Field on a Surface with

Card1/2

a Non-homogeneous Work Function" was considered by E.Ya. Zandberg and N.I. Ionov. I.N. Bakulina and N.I. Ionov read a paper entitled "Determination of the Electron Attachment Energy and of the Potentials of Atoms by the Method of Surface Ionisation". N.L. Yasnopol'skiy and A.P. Alekseyevadealt with the problem of "Passage of Steady-state Currents Through a Dielectric When the Current Carriers Are Introduced Through One of the Contacts by Means of Electron Bombardment". The lecture by D.A. Ganichev and K.G. Utkin discussed the following - "The Possibility of the Analysis of the Total-energy Distribution of Electrons in a Quasi-spherical Condenser". The work by M.L. Kapitsa, S.A. Fridrikhov and A.R.Shul'man dealt with an investigation of the secondary electron emission and the characteristic energy losses of a number of dielectrics (glass, mica, fluorite and alkali-haloid monocrystals).

Card 2/2

SOV/109-4-7-24/25

AUTHORS: Alekseyeva, A.P., Vikhlyayeva, R.P., Shabel'nikova, A.E. and Yasnopol'skaya, A.A.

TITLE: Interdepartmental Seminar on Cathode Electronics (14th Meeting) (News Item)

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 7, pp 1215 - 1216 (USSR)

ABSTRACT: The meeting of the seminar took place on March 2, 1959, at the Institut radiotekhniki i elektroniki AN SSSR (Institute of Radio-engineering and Electronics of the Ac.Sc., USSR). During the meeting, 8 articles were read and discussed. The first article, by A.R. Shul'man and Yu.A. Morozov, was devoted to the investigation of the elastic reflection of the electrons having energies ranging from 100 - 2 000 eV from 10 different elements (Cr, Ni, Cu, Ge, Mo, Mg, Ta, Pt, Au, C). Ye.S. Mashkova and G.A. Chetverikova read a paper on "Investigation of the Temperature Dependence of the Secondary Emission Coefficient of Monocrystals of Barium Titanate and Lead Titanate".

Card1/3

SOV/109-4-7-24/25

Interdepartmental Seminar on Cathode Electronics (14th Meeting) (News Item)

M.V. Sinel'nikov reported on his investigation of the electron emission of a pure metal surface at room temperatures.

A paper entitled "Electro-microscopic Investigation of the Emission of Pressed Cathodes" was read by Ye.M. Dubinina.

A.A. Gugnin and B.N. Popov reported on "Influence of Oxygen on the Emission of the Cathodes Prepared From the Salts of Barium and Calcium Having High Melting Points".

B.Ch. Dyubua and B.N. Popov dealt with "Some Properties of the Barium-titanium System".

The results of an investigation of the field emission from tungsten monocrystals by pulse technique were presented by I.I. Gofman and G.N. Shuppe.

Card 2/3

SOV/109-4-7-24/25

Interdepartmental Seminar on Cathode Electronics (14th Meeting) (News Item)

V.M. Gavrilyuk and Yu.S. Vedula presented a paper dealing with "Adsorption of Barium and Barium Oxide on Tungsten Surfaces".

Card 3/3

Shabel'nikova, A.E.

S/109/60/005/05/020/021
E140/E435

AUTHORS: Baselayeva, N.Ya., Vikhlyayeva, R.P., Zhdan, A.G., Zernov, D.V., Kofanova, T.L., Karyova, L.Ya., Politova, N.M., Polyakova, M.A., Popov, B.N., Spivak, G.V., Shabel'nikova, A.E. and Yasnopol'skaya, A.A.

TITLE: Report on the Ninth All-Union Conference on Cathode Electronics

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 5, pp 866-879 (USSR)

ABSTRACT: This conference took place in Moscow from 21-28th October 1959 with the participation of Soviet scientists and guests from Hungary, Eastern Germany, the Chinese Peoples' Republic and Czechoslovakia. The chairman of the organization committee was Academician Vekshinskiy. The report consists of brief abstracts of 125 papers presented at the plenary sessions and the sections of the conference. 15 Reports were presented in the section on surface properties of solids dealing with electron adsorption and structural properties of active surface films. Electron-optical studies of "patch fields" on emitting surfaces were discussed. 6 Papers on the

Card 1/2

physics of semiconductor cathodes were given in the section on thermionic emission. 17 Papers were presented in the section on photoelectric emission. Many papers discussed industrial technology of photocells and multipliers. 16 Papers were presented at the section on secondary-electron emission. The section on field emission heard 11 papers discussing pulse field emission at high current densities, surface phenomena, field emission of semiconductors and the "condenser" cathode. More than 50 papers and brief communications were presented at the section on properties, new types and technology of cathodes, relating to the technology of various types of cathodes, their behaviour in practical devices and the operating mechanisms of individual cathodes. 19 Papers were given at the section on interaction of solid bodies with streams of charged particles and residual gases. Notes of conference discussion indicated that several sharp and critical exchanges of views took place.

Card 2/2

S/109/60/005/010/028/031
E033/E415

AUTHORS: Vikhlyayeva, R.P., Zhdan, A.G. and Shabel'nikova, A.E.

TITLE: Inter-Institutional Seminar on Cathode Electronics (15th Meeting)

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.10, pp.1747-1748

TEXT: Six reports were heard at the 15th Meeting of the Inter-Institutional Seminar on Cathode Electronics held on April 4, 1960 at the Institut radiotekhniki i elektroniki AN SSSR (Institute of Radioengineering and Electronics AS USSR). In his "The Application of Thermo-Electronic Emission for Direct Conversion of Heat Energy into Electrical", N.D.Morgulis gave a review of the work carried out at the Institut fiziki UkrSSR (Institute of Physics AS UkrSSR) and also at the Kiyevskiy gosudarstvennyy universitet (Kiyev State University). Some general physical properties of such converters, using pure tungsten, barium and cesium on tungsten, and thorium bicarbide cathodes had been investigated. For ThC_2 cathodes at 1900 to 2100°K, the efficiency was 8 to 15% and the e.m.f. 1.7 V. L.N.Dobretsov and N.D.Devyatkov took part in the discussion. V.B.Sandomirskiy reported on his and Sh.M.Kogan's work on the

Card 1/4

S/109/60/005/010/028/031
Inter-Institutional Seminar ... E033/E415

external emission of "hot" electrons from homeopolar semiconductors with a strong applied homogeneous electric field. The emission current is very dependent on the field particularly in the region corresponding to the horizontal part of the semiconductor volt-amp characteristic. M.I.Yelinson and A.G.Zhdan gave a report on the emission of "hot" electrons from quartz, activated by carbon. The authors had observed the emission of "hot" electrons from thin layers (approximately 5 microns) of $SiO_2 + C$, depending on the voltage at the layer, the anode voltage and temperature. A.L.Shustina communicated her observations on self-maintained emission from nickel-based, magnesium-oxide, cold-cathodes. The emission was excited by either visible light or electron bombardment and was accompanied by a uniform blue glow. The relation between the current and the collector potential is exponential and the maximum current density was 7 mA/cm^2. The emission current is relatively stable (3% fall over a period of 8 hours). D.V.Zernov pointed out that self-maintaining emission also occurs in films of other materials, e.g. KCl and borium anhydride. N.L.Yasnopol'skiy, N.A.Karelina and V.S.Malysheva reported on secondary emission under (primary

Card 2/4

S/109/60/005/010/028/031
E033/E415

Inter-Institutional Seminar ...

electron) irradiation of thin layers of magnesium oxide on a thin aluminium base (approximately 400 Å) with current density approximately 10^{-6} A/cm^2. Secondary emission coefficients $\sigma = 7.5 - 8.5$ were obtained for primary electron energies $V_p = 3.5 - 4.5$ kV and $\sigma_{max} = 9$ when $V_p = 5$ kV on MgO film formed by activation of Mg in air. Stable values were somewhat lower. In the report "Secondary Emission under (Primary Electron) Irradiation from some Dielectrics" M.M.Sheftel' communicated that the maximum values of the secondary emission coefficient σ_{max} were: for KCl 4.2 with $V_p = 3$ kV; for NaCl 5.4 with $V_p = 3.5$ to 4 kV; for MgO 8.8 to 9.8 with $V_p = 6$ kV and current densities $\sim 10^{-9}$ A/cm^2. The base was aluminium. It was stated that a thin layer of gold between the Al and the dielectric led to an increase in σ. The "outflight" angular distribution of secondary electrons did not conform to a cosine law. A.Ya.Vyatskin pointed out the necessity of careful separation of "true" secondary electrons from reflected primary electrons. L.N.Dobretsov mentioned that the field of the charged spot can reduce δ and

Card 3/4

distort the angular distribution of secondary electrons. V.I.Fomina in the report "Investigation of Induced Conductivity of Some Chalcogenides of Antimony" gave results obtained on thin layers of Sb_2S_3 and Sb_2Se_3. For Sb_2S_3, gain coefficients of 500 to 600 and "multiplicity" coefficients of 100 to 200 were obtained. For Sb_2Se_3, corresponding figures were 1500 to 1700 and 2 to 3. The induced current depended on the exciting current density by $I_{in} = aI_p^n$, where n varies from 0.5 to 1 at room temperature and above. The induced current also depends on the temperature in an exponential manner.

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S/109/60/005/012/035/035
E192/E382

AUTHORS: Vikhlyayeva, R.P., Kul'varskaya, B.S.,
Shabel'nikova, A.E. and Yasnopol'skaya, A.A.

TITLE: Interdepartmental Seminar on Cathode Electronics (16th Session)

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol. 5, No. 12, pp. 2074 - 2075

TEXT: The Sixteenth Interdepartmental Seminar on Cathode Electronics took place on June 6, 1960.
Five papers were read:
"Investigation of the Influence of the Adsorption of Gases and Their Mixtures on the Work Function of Semiconductors" was discussed in a paper by E.Kh. Yenikeyev et al. This paper gave the results of the measurement of the work function in Ge, CuO, NiS, MnO_2 and other materials in the presence of various adsorbed gases and vapours (O_2, H_2, H_2O, etc.).

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A.V. Druzhinin reported on the influence of the contact fields of the spots on the current taken from the cathode operating

Card 1/3

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E192/E382

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Interdepartmental Seminar on Cathode Electronics
(16th Session)

in the space-charge regime. On the basis of his experimental data the author showed that the main factor leading to an increase in the perveance of a diode with a pressed cathode is the increase in the intensity of the activated barium stream.

The third paper was read by P.V. Timofeyev and R.M. Aranovich. They reported the results of their investigation of a cold cathode made of magnesium oxide. They constructed electron tubes with magnesium-oxide cathodes (on a nickel base) coated with a layer of porous magnesium oxide having a thickness of 50 μ. These tubes could operate in various amplifying devices and could give an anode current up to 10 mA. The useful life of these tubes is more than 10 000 hours. The authors also demonstrated such a tube in a low-frequency amplifier.

Card 2/3

S/109/60/005/012/035/035
E192/E382

Interdepartmental Seminar on Cathode Electronics
(16th Session)

In the paper "Secondary-emission Characteristics of Antimony Sulphide and its Analogues" by V.L. Makedonskiy, it was shown that the secondary emission coefficient of the layers of Sb_2S_3, Sb_2Se_3 and Sb_2Te_3 does not exceed 1.3.

A paper by V.A. Grodko et al entitled "Influence of the Difference of the Work Functions of the Electrodes of a Thermionic Converter on Its Output Parameters" presented the results of a theoretical analysis of the dependence of the output power and efficiency of a converter on the difference between the work functions of the anode and cathode (the above paper is published in the present issue of the journal).

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Card 3/3

YASNOPOL'SKIY, N.L.; BALASHOVA, A.P.; SHABEL'NIKOVA, A.E.

Experimental study of excited conductivity. Radiotekh. i elektron. 7 no.9:1665-1671 S '62. (MIRA 15:9)
(Electric conductivity)

ACC NR: AP7001719 SOURCE CODE: UR/0048/66/030/012/1882/1887

AUTHOR: Yasnopol'skiy, N.L.; Shabel'nikova, A.E.; Shevaldin, V.A.; Lozhkina, N.S.;

ORG: none

TITLE: Investigation of field-enhanced secondary-electron emission from porous emitters /Paper presented at the 12th All-Union Conference on Physical Principles of Cathode Electronics held in Leningrad from 22-26 October 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 12, 1966, 1882-1887

TOPIC TAGS: electron emission, secondary electron, electric field, magnesium oxide

ABSTRACT: An experimental study was made to explain the mechanism of the field-enhanced secondary-electron emission from porous MgO. Samples were prepared by depositing Mg smoke in the air on 200 Å-thick aluminum membranes stretched over fine supporting meshes with 70% penetrability, which made it possible to bombard the material with electrons from both the front and the back. The investigations of the secondary emission coefficients as a function of the electric field intensities included measurements

Card 1/2 UDC: none

ACC NR: AP7001719

performed consecutively on the same sample, measurements made on several MgO samples, and measurements of total secondary emission coefficients and their non-inertial components at primary electron energies in the range of 2—5 keV with irradiation from the front and back. From an analysis of the curves, it was concluded that the field-enhanced secondary emission, as well as the occurrence of self-consistent emission, cannot be explained by a single physical cause but must be attributed to the superposition of two effects due to different mechanisms. The field enhanced emission occurs, it is stated, in the whole range of the applied potential difference, to which inertial emission is added only when the field's intensity is sufficiently high. Measurements were also made on porous CsI films, and they likewise showed high coefficient values of field-enhanced emission. The authors thank D. V. Zernov for evaluating the work. [ZL]

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 010/ OTH REF: 003/
ATD PRESS: 5114

Card 2/2

SHABEL'NIKOVA, M. V.

3(7) PHASE I BOOK EXPLOITATION SOV/2114

Tsentral'nyy institut prognozov

Voprosy sinopticheskoy i dinamicheskoy meteorologii (Problems of Synoptic and Dynamic Meteorology) Moscow, Gidrometeoizdat (Otd-niye), 1958. 110 p. (Series: Its: Trudy, vyp. 77). 1,100 copies printed.

Sponsoring Agency: USSR. Glavnoye upravleniye gidrometeorologicheskoy sluzhby.

Ed. (Title page): A.I. Burtsev; Ed. (Inside book): V.I. Tarkhunova; Tech. Ed.: T.Ye. Zemtsova.

PURPOSE: This issue of the Institute's Transactions is intended for synoptic and dynamic meteorologists.

COVERAGE: This collection of articles deals with various aspects of atmospheric circulation. Individual papers discuss convection in warm fronts, visibility during snowstorms, the relationship be-

Card 1/3

tween fronts and jet streams, questions of pressure change, and vertical motions in the atmosphere. References accompany each article.

TABLE OF CONTENTS:

Uspenskiy, B.D. Conversion of the Vortex Velocity Equation Into a Form That Would Facilitate the Analyses of Changes Occuring in the Fields of Absolute Topography 3

Pogosyan, Kh.P., and M.V. Shabel'nikova. Jet Streams and Fronts 8

Bachurina, A.A. Analysis of Horizontal Visibility Near the Earth's Surface During a Snowstorm 15

Lebedeva, N.V. Forced Convection on a Warm Front 42

Lebedeva, N.V. Thermal Convection 64

Burtsev, A.I. A Method for Computing Vertical Air Velocity by Taking Into Account the Variations of the Vertical Temperature

Card 2/3

Problems of Synoptic and Dynamic Meteorology SOV/2114

82

Gradient With Altitude

Turketti, Z.L., and V.I. Zhil'tsova. Results Obtained From Testing the Computation Method for Precipitations During the Cold Half of the Year in the Operations of the Central Institute of Forecasting 103

AVAILABLE: Library of Congress

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8-13-59

Card 3/3

AUTHOR: Shabel'nikova, M.V. 50-58-5-6/20

TITLE: On the Connection Between the Temperature Contrasts in the Zone of Jet Currents and the Evolution of Cyclones (O svyazi mezhdu kontrastami temperatury v zone struynykh techeniy i evolyutsiyey tsiklonov)

PERIODICAL: Meteorologiya i Gidrologiya, 1958, Nr 5, pp 33-36 (USSR)

ABSTRACT: In the course of the investigation of these currents an interrelation between the latter with the formation of cyclones was found to exist. It is known that the horizontal temperature contrasts play a decisive part in the formation of these currents. They are on the other hand also connected with the evolution of cyclones. For these reasons the author made it her task to determine the problem mentioned in the title. For the years 1954-1956 60 cyclones were selected, where only those were investigated which deepen and run through all 3 stages of evelopment. After a thorough analysis it was found that all these cyclones are connected with the above-mentioned currents. In contrast to references 1 and 2 the author also analyzed the changes of temperature in the system of cyclones. The contrasts of temperatures were

Card 1/3

determined in distances of 800-900 km (instead of as usual 1000 km), that means in a region with more or less equal gradients. The diagram of figure 1 was constructed on the basis of data on the atmospheric pressure and the temperature contrasts. The analysis of the results made possible the conclusion that under equal other conditions the cyclones are usually formed and deepen when the the temperature contrasts in the frontal zone in the layer of 500-1000 mb exeed 2,0 dkm/100 km. In case that the average temperature contrasts amount to less than 1,5 dkm the cyclones are as a rule filled up. The diagrms (figure 2) for the distribution of the temperature contrasts in the system of cyclones in the entire tropospheric layer (OT_{1000}^{300}) proved to be analogous to that of figure 1. At the same time the positions of the cyclones in different stages of development with regard to the axis of the jet currents were investigated. It became evident that cyclones form at

50-58-5-6/20

On the Connection Between the Temperature Contrasts in the Zone of Jet Currents and the Evolution of Cyclones

the earth's surface either to the right of the above-mentioned axis or under it in the zone of high temperature contrasts (more than 20 dkm per 1000 km). In the further course the the cyclone migrates below the current and crosses it. The contrasts remain unchanged on that occasion. Cyclones at the left sinde of the current behave in a similar way until their centers near to the earth do not come out of the zone of these high temperature contrasts. Then the deepening of the cyclones rapidly ceases and its filling up begins. The cyclones formed left of the yet current are not further developed, remain weak and are filled up. There are 3 figures and 3 references, 2 of which are Soviet.

1. Meteorology 2. Jet streams (Meteorology)--Temperature factors
3. Cyclones

Card 3/3

POGOSYAN, Kh.P.; SHABEL'NIKOVA, M.V.

Jet streams and fronts. Trudy TSIP no.77:3-14 '58.
(MIRA 12:5)

(Jet stream)

POGOSYAN, Khoren Petrovich. Prinimali uchastiye: UGAROVA, K.F., mladshiy nauchnyy sotrudnik; SHABEL'NIKOVA, M.V., mladshiy nauchnyy sotrudnik; PAVLOVSKAYA, A.A., mladshiy nauchnyy sotrudnik; PAVLOVA, Ye.N., inzh.; GOLOVUSHKINA, A.N., starshiy tekhnik; MOSYAGINA, Ye.M., starshiy tekhnik; SEMENOVA, A.V., starshiy tekhnik. ZUBYAN, G.D., otv.red.; BLINNIKOV, L.V., red.; YERSHOVA, T.S., tekhn.red.

[Jet streams in the atmosphere] Struinye techeniia v atmosfere. Moskva, Gidrometeor.izd-vo (otd-nie), 1960. 182 p.
(Jet stream) (MIRA 13:8)

SHABEL'NIKOVA, M.V.

Meridional transformations of the thermobaric field of the atmosphere and evolution of jet streams. Meteor. i gidrol. no.8: 26-32 Ag '61. (MIRA 14:7)

(Jet stream)

S/169/62/000/001/052/083
D228/D302

AUTHORS: Pogosyan, Kh. P. and Shabel'nikova, M. V.

TITLE: Evolution of jet streams during meridional transformations of the thermobaric field

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 1, 1962, 49, abstract 1B316 (Tr. Tsentr. in-ta prognozov, no. 104, 1961, 89-117)

TEXT: Two cases of the meridional transformation of the thermobaric field in the Far East -- December 31 - January 3, 1958, and January 15-20, 1959 -- and the evolution of jet streams in the summer period are analyzed. The merging of extratropical and subtropical high-altitude frontal zones, the increase of the baric and thermal gradients, and the coalescence and strengthening of jet streams occur at the base of high-altitude troughs during the meridional transformation of the thermobaric field. The coalescence of jet streams into one very powerful and structurally-complex jet is observed at the time of very abrupt meridional transformations. The

Card 1/2

Evolution of jet ... S/169/62/000/001/052/083
D228/D302

most powerful meridional transformations are observed in winter in the Far East, this being promoted by this area's geographic position. The area of tropospheric cold becomes stronger at the time of meridional transformations in the high-altitude trough region, and a region of heat is formed in the lower troposphere; the processes have a contrary character in the high-altitude ridge region. 7 references. /_Abstractor's note: Complete translation._/

Card 2/2

ACCESSION NR: AT4017174 S/2546/63/000/128/0106/0119

AUTHOR: Shabel'nikova, M. V.

TITLE: Change of the temperature field in the stratosphere in summer in a system of pressure formations

SOURCE: Moscow. Tsentral'ny*y institut prognozov. Trudy*, no. 128, 1963. Voprosy* kratkosrochny*kh prognozov pogody* (Problems of short-range weather forecasting), 106-119

TOPIC TAGS: meteorology, air temperature, stratosphere, atmospheric pressure, troposphere, lower stratosphere, cyclone, anticyclone, weather forecasting, short-range weather forecasting

ABSTRACT: A study was made of the temperature field of the troposphere and lower stratosphere to the 30-mb level in a system of cyclones and anticyclones at different stages of their development during the warm season of the year. The investigation was based on a study of 23 cyclones and 18 anticyclones. The pressure formations were traced from the time of their development to the filling stage. Interesting analyses of the temperature field at the 30-, 50-, 100-, 200- and 500-mb levels were made (see Figures 1 and 2 of Enclosure for examples). It was confirmed that pressure formations draw into their circulation not only air from the

Card 1/3

ACCESSION NR: AT4017174

troposphere, but also air from the lower layers of the stratosphere to heights of 20-30 km. During the development of cyclones and anticyclones the temperature field in the lower stratosphere in summer changes to a greater degree than the pressure field. In the process of deepening of cyclones the air temperature in the troposphere decreases in its system, but in the lower stratosphere it increases. During the intensification of an anticyclone in the troposphere there is a temperature increase, but in the lower stratosphere there is a temperature decrease in the anticyclonic region. The maximum horizontal temperature gradients in a deepening cyclone or an intensifying anticyclone are observed in the lower stratosphere between the 200- and 100-mb surfaces; above the 100-mb surface the temperature gradient decreases. In a cyclonic system in the stratosphere a region of heat is accumulated in the left part of the cyclone (with respect to its direction of movement); as the cyclone develops the inclination of the region of heat decreases, tending to assume a vertical position over the center of the cyclone. In an anticyclonic system in the stratosphere a region of cold is accumulated in the right part of the anticyclone; as the anticyclone develops the inclination of the region of cold decreases, tending to assume a vertical psotion. The region of heat in the stratosphere, forming over middle-latitude cyclones, merges aloft with stratospheric polar heat. The region of cold in the stratosphere, forming over anticyclones, merges with the stratospheric cold of the middle and low latitudes.

Card 2/2

ACCESSION NR: AT4017174

Frontal surfaces in the stratosphere, like in the troposphere, are deflected to the right part of a cyclone as it develops, or into the left part of an anticyclone as it develops. Orig. art. has: 4 tables and 5 figures.

ASSOCIATION: Tsentral'nyy institut prognozov (Central Institute of Forecasts)

SUBMITTED: 00 DATE ACQ: 24Feb64 ENCL: 02

SUB CODE: AS NO REF SOV: 008 OTHER: 000

Card 3/3

POGOSYAN, Kh.P.; PAVLOVSKAYA, A.A.; SHABEL'NIKOVA, M.V.; KATS,
RUSAKOVA, G.Ya., red.

[Interrelationship of processes in the troposphere and stratosphere of the northern hemisphere] Vzaimosviaz' protsessov v troposfere i stratosfere severnogo polushariia. Leningrad, Gidrometeorizdat, 1965. 127 p.
(MIRA 18:7)